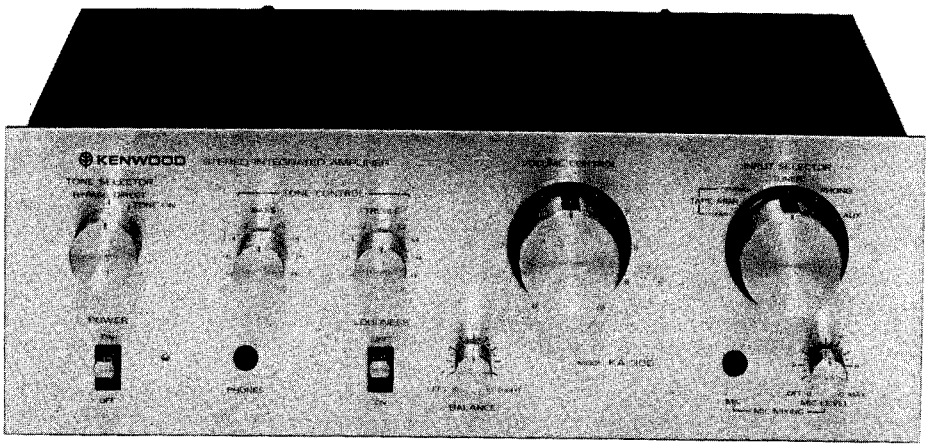
KENWOOD

HI/FI STEREO COMPONENTS

SERVICE MANUAL

KA-305
(KA-3055)

An item of adjustment is written in three languages — English, French and German.
Un article sur réglages est écrit en trois langues, Anglais, Francais et Allemand.
Ein Artikel der Abgleich wird auf drei Sprachen, Englische, Französisch und Deutsch geschrieben.



STEREO INTEGRATED AMPLIFIER

KA-305

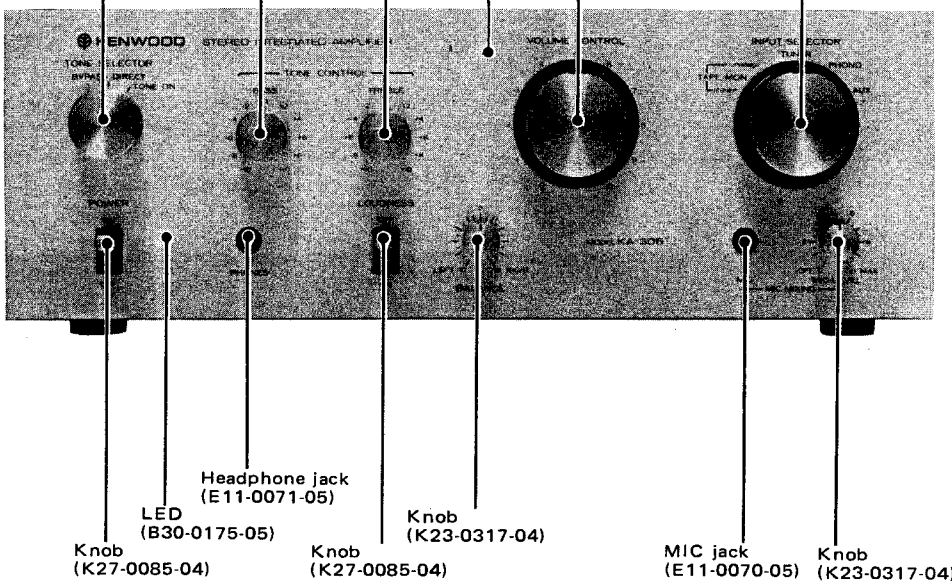
CONTENTS

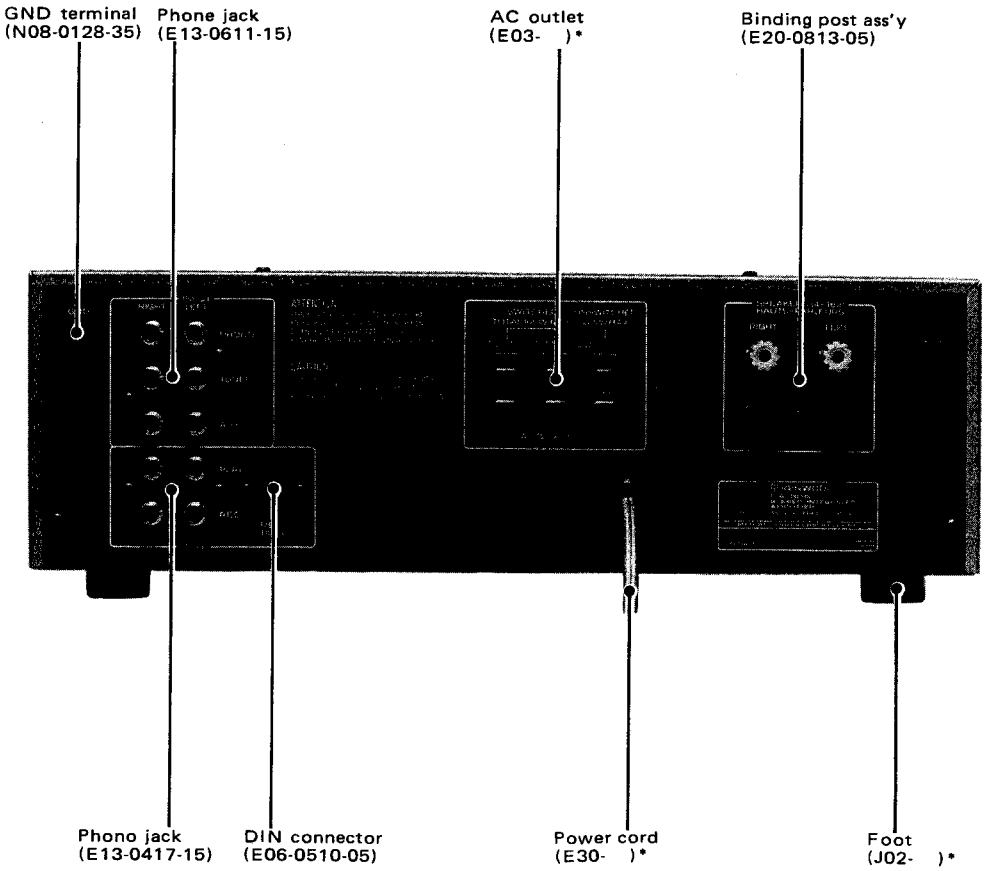
EXTERNAL VIEW 3
INTERNAL VIEW 4
BLOCK AND LEVEL DIAGRAM 5
CIRCUIT DESCRIPTION 5
DISASSEMBLY FOR REPAIR 6
EXPLODED VIEW 7
EXPLODED VIEW PARTS LIST 7
ADJUSTMENT 8
PC BOARD 9
SCHEMATIC DIAGRAM 11
PARTS LIST 12
SEMICONDUCTOR SUBSTITUTIONS 12

Note:
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

Region	Code
U.S.A.	K
Canada	P
PX	U
Australia	X
Europe and Scandinavia	E
England	T
South Africa	S
Other Areas	M
Audio Club (KA-3055)	H

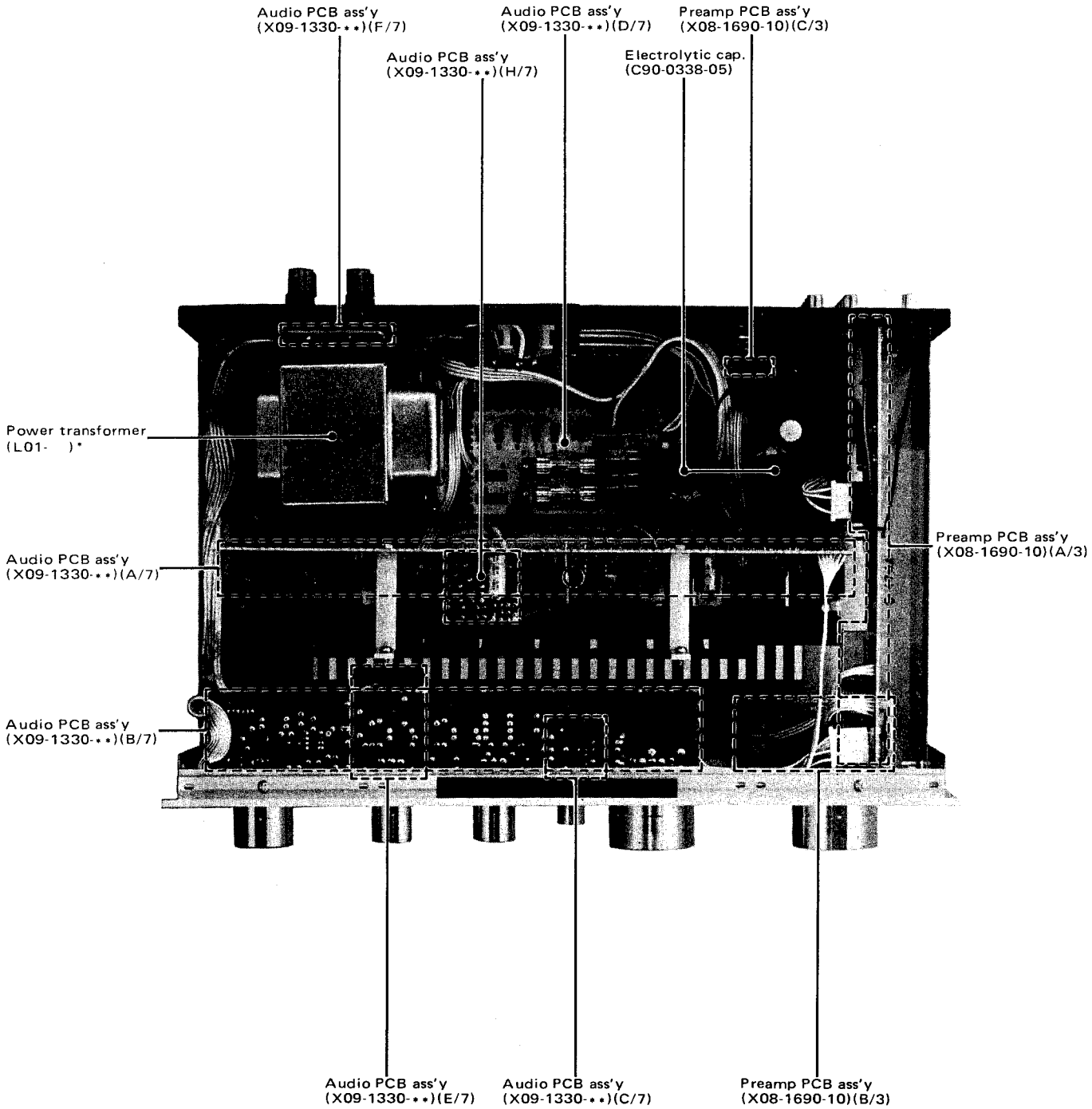
EXTERNAL VIEW





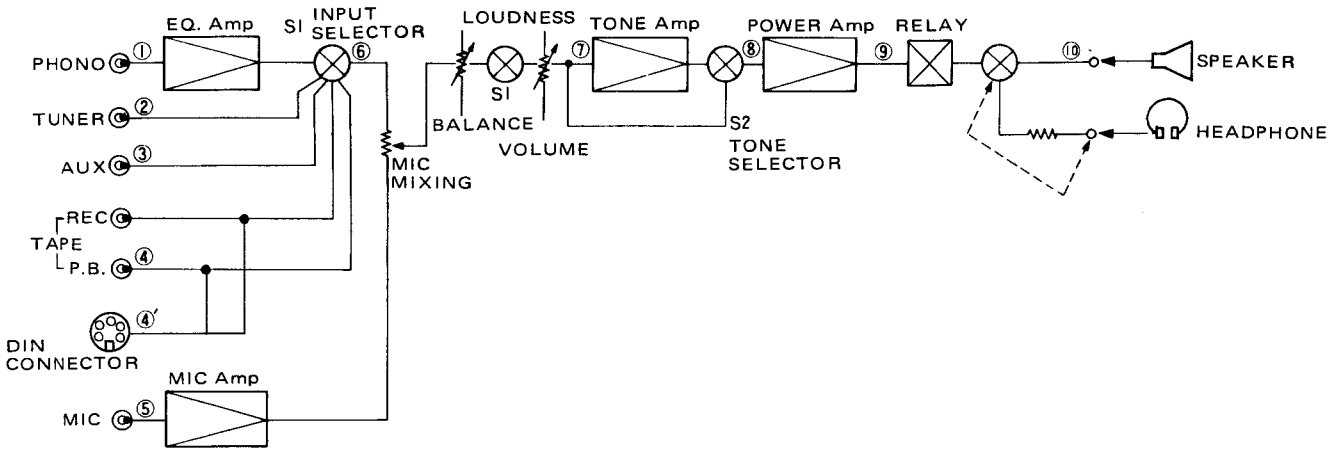
* Refer to parts list.

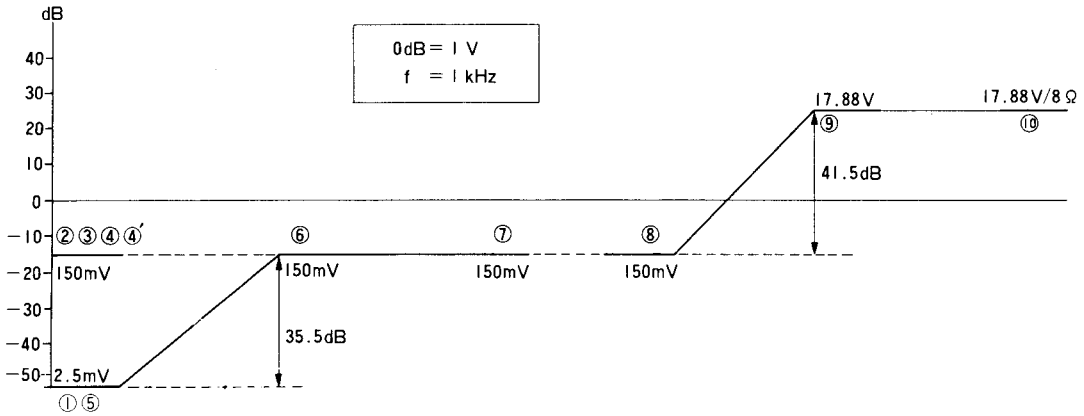
INTERNAL VIEW



* Refer to parts list.

BLOCK AND LEVEL DIAGRAM





CIRCUIT DESCRIPTION

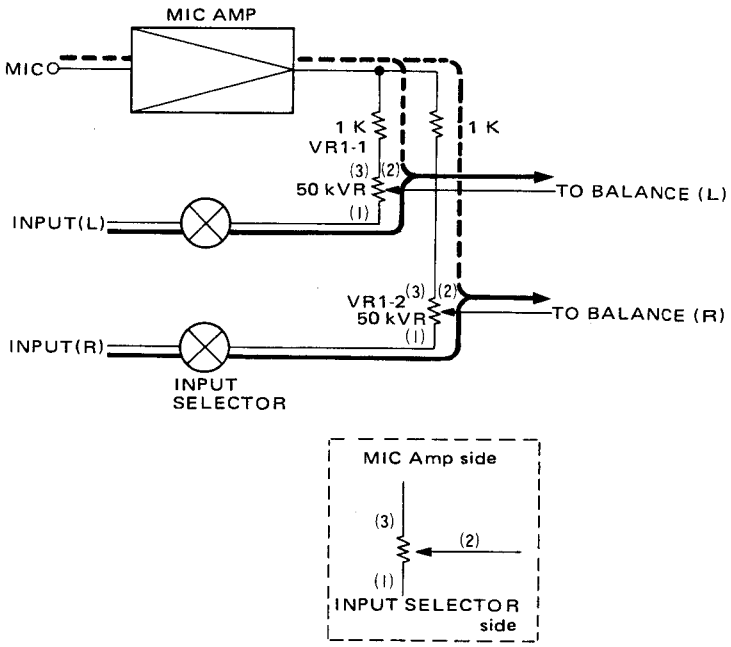
MIC MIXING CIRCUIT

Block diagram of the Mic Mixing Circuit is shown in the right.

Signals from the input selector are applied to the point (1) of VR and signals from Mic to (3). Mixed signals are picked up from the point (2) and fed to a balance control.

When the potentiometer is turned fully counterclockwise i.e., the rotor is in the position (1), mic signals are not mixed with line signals.

Mic signals change inversely proprotional to the line signals by turning the mic mixing control knob, so the two signals can be mixed at any rate. Cross talk between left and right channel is negligible thanks to low output impedance of the mic amp.



DISASSEMBLY FOR REPAIR

1. TONE AMP UNIT

1. Pull off the knobs (①,②,④).
2. Remove the nut (B).

2. MIC AMP UNIT, BALANCE CONTROL UNIT HEAD PHONE JACK UNIT, POWER SWITCH

1. Pull off all the knobs (① ~ ⑥).
2. Remove the screws (Ⓐ) and take off the front panel.

3-1. For the mic amp, remove the nut and the U-shaped metal fitting (Ⓓ).

3-2. Balance control unit can be taken off by removing the nut and the lever knob (Ⓔ).

3-3. Headphone jack can be taken off by removing the U-shaped metal fitting(Ⓕ).

Note:
Lever knobs (Ⓒ,Ⓔ) cannot be removed without taking off the front panel.

3. AUDIO UNIT

1. Raise up the pawls which fix the heat sink.
2. Remove three screws fixing the heat sink to the chassis.
3. Pull the heat sinker up and disconnect the thermisters.
4. Remove five screws fixing the PCB to the heat sink.
5. The PCB for Audio unit can be opened with power transistor legs as a faecxum.

Note:
Repetition of this action will lead breakage of copper foil. Do not apply excessive pressure on the unit.

4. POWER SUPPLY UNIT

To set up the PCB, pull up the board while pushing in the pawls of the supporter as shown in Fig. 2.

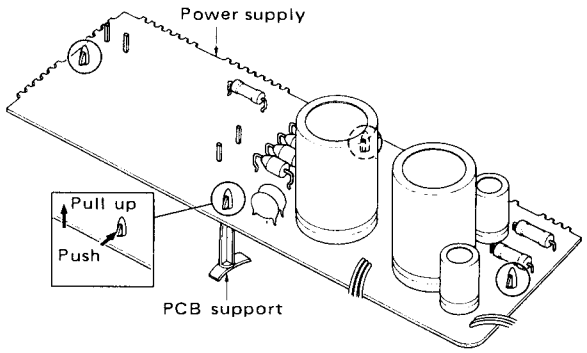


Fig. 2 Power Supply Unit

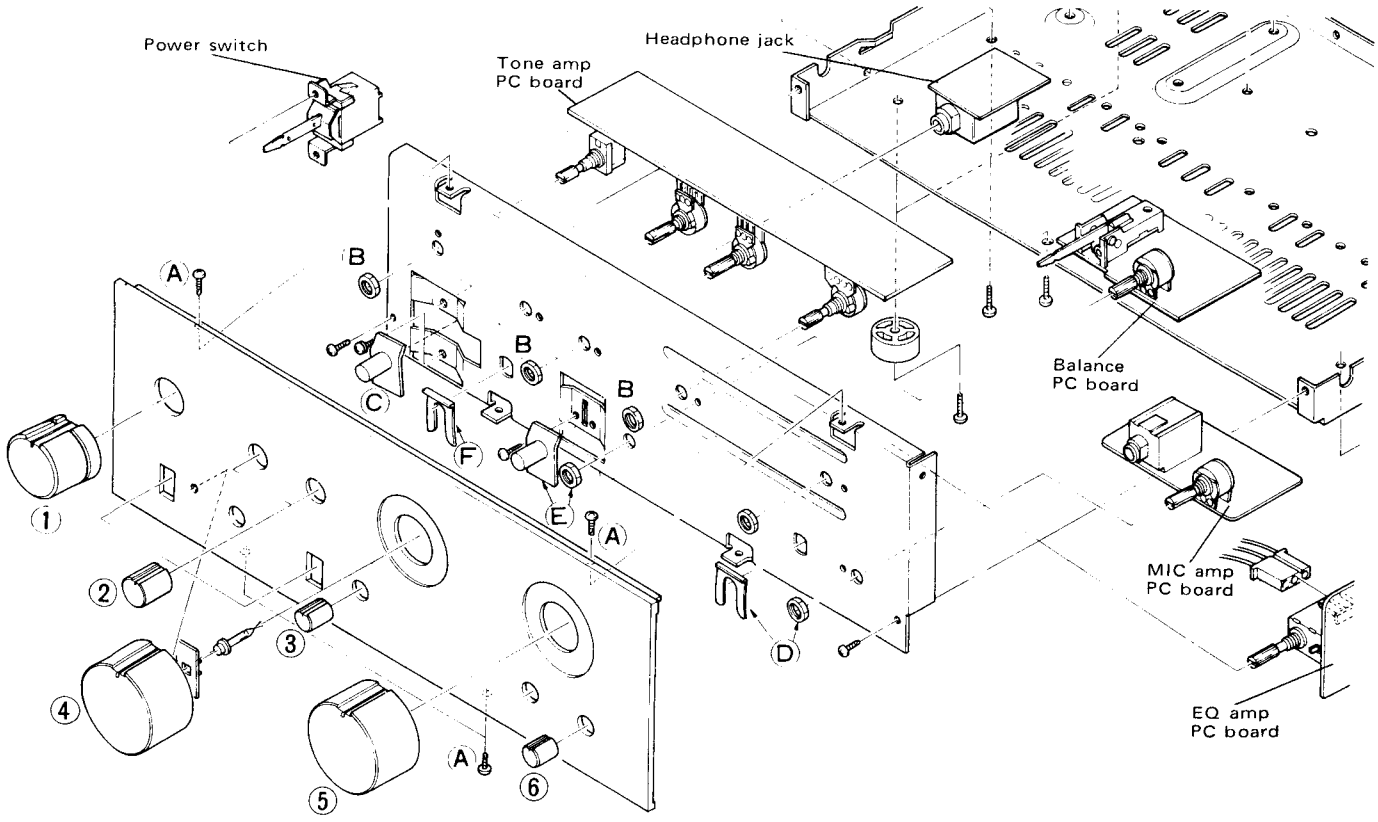
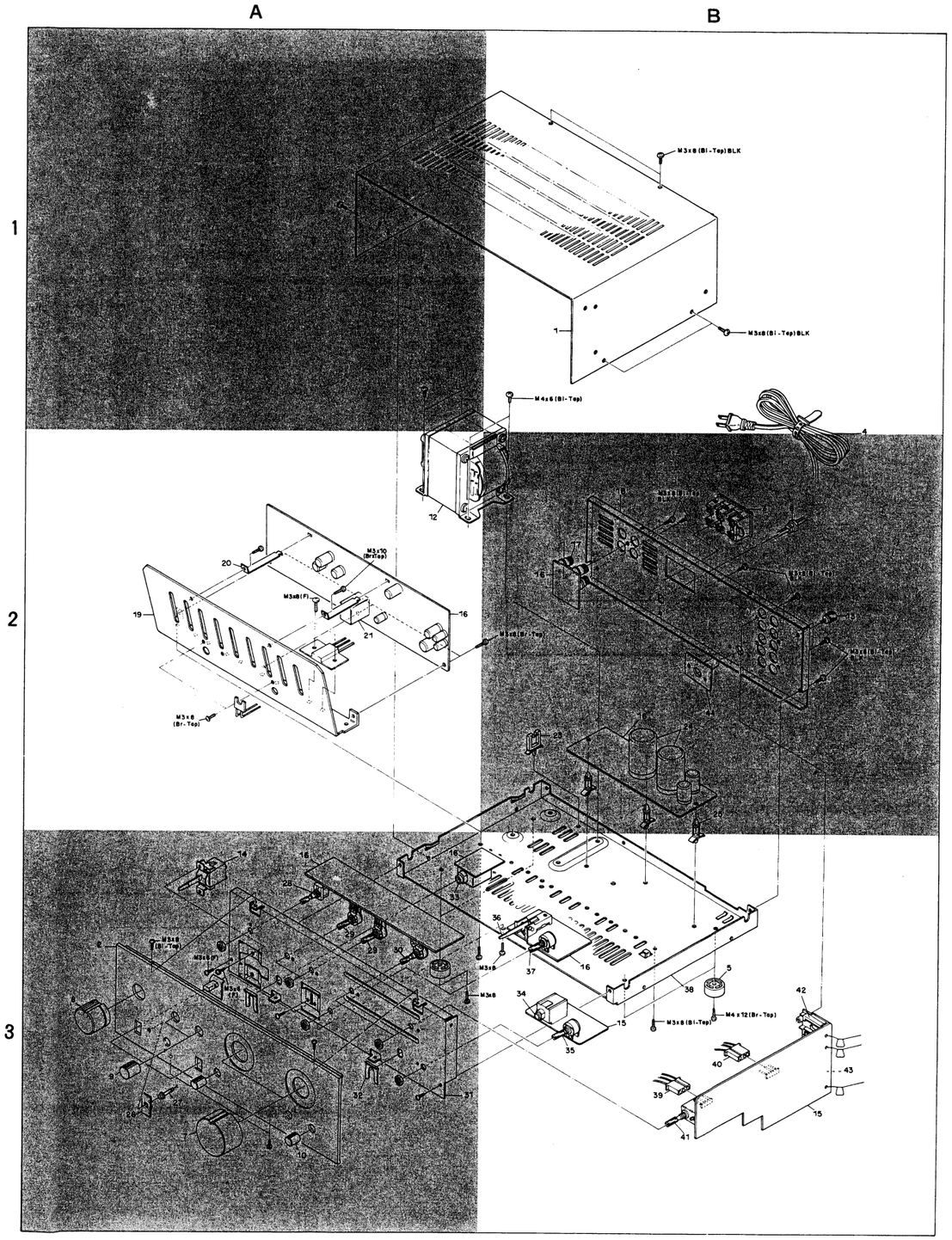


Fig. 1 Tone Amp, MIC Amp, BALANCE, HEADPHONE Jack

EXPLODED VIEW



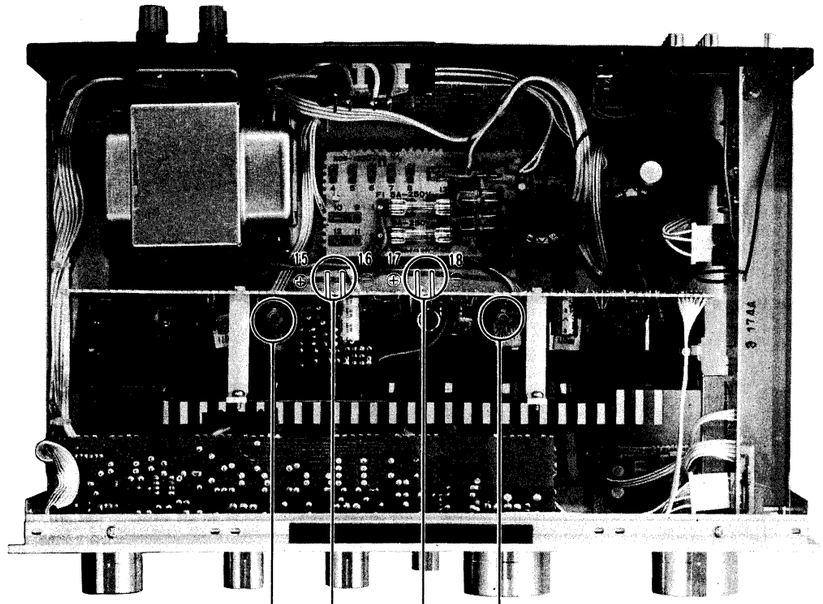
EXPLODED VIEW PARTS LIST

☆ : New parts
* Refer to parts list.

Ref. No.	Parts No.	Description	Remarks
1	A01-0351-13	Case	1B
2*	A20- -	Panel ass'y	☆3A
3*	E03- -	AC outlet	2B
4*	E30- -	Power cord	1B
5*	J02- -	Foot	3B
6*	J41- -	Power cord bushing	2B
7	K23-0311-04	Knob (VOLUME, SELECTOR)x2	☆3A
8	K23-0313-04	Knob (POWER AMP, DIRECT)	☆3A
9	K23-0315-04	Knob (TONE) x2	☆3A
10	K23-0317-04	Knob (BALANCE, MIC) x 2	☆3A
11	K27-0085-04	Knob (Lever) x 2	3A
12*	L01- -	Power transformer	☆2A
13	N08-0128-35	GND terminal	2B
14*	S33- -	Lever switch (POWER)	3A
15	X08-1690-10	Preamp PCB ass'y	☆3B
16*	X09- -	Audio PCB ass'y	☆2A,2B 3A,3B
17	E20-0813-05	Binding post ass'y	2B
18	—	Rear panel	☆2B
19	—	Heat sink	2A
20	—	PCB holder	2A
21	S51-2038-05	Relay	2A
22	—	—	
23	—	Wire clamp	2B
24	C90-0338-05	Electrolytic cap. 6800μF 42WV	2B
25	—	PCB holder	2B
26	—	LED holder	3A
27	B30-0175-05	LED	3A
28	S29-1117-05	Rotary switch	3A
29	R06-3015-05	Potentiometer 20kΩ(B)x2	3A
30	R05-5022-05	Potentiometer 100kΩ(3BM)	3A
31	—	Sub panel	3A
32	—	Phone jack mount plate	3A
33	E11-0071-05	Phone jack	3A
34	E11-0070-05	Phone jack	3B
35	R06-4040-05	Potentiometer 50kΩ(B)x2	3B
36	S33-2031-05	Lever switch	3B
37	R06-5040-05	Potentiometer 200kΩ(MN)	3B
38	—	Chassis	3B
39	—	Connector	3B
40	—	Connector	3B
41	S29-1118-05	Rotary slide switch	3B
42	E13-0611-15	Phono jack	3B
43	E13-0417-15	Phono jack	3B
44	E06-0510-05	DIN connector	2B

KA-305 KA-305

ADJUSTMENT



Trimming pot. VR5(L)

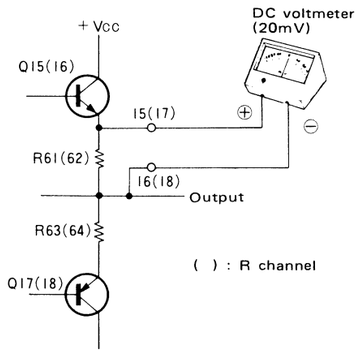
BIAS current adjusting point (L)

Trimming pot. VR6(R)

BIAS current adjusting point (R)

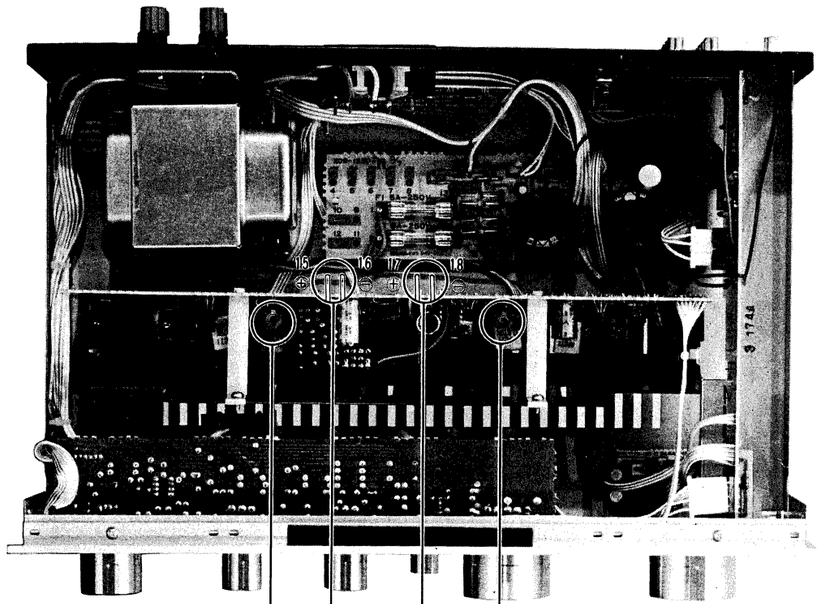
BIAS CURRENT ADJUSTMENT

① Turn the volume control knob fully counterclockwise.
② Connect a DC voltmeter between the adjusting points 15 and 16 (17 and 18) of audio pcb ass'y (X09-1330-**)
③ Adjust the trimming pot. VR5 (VR6), for 20 mV reading of the voltmeter.



< Bias Current Adjustment >

RÉGLAGES



Potentiomètre ajustable VR5 (gauche)

Points d'alignement

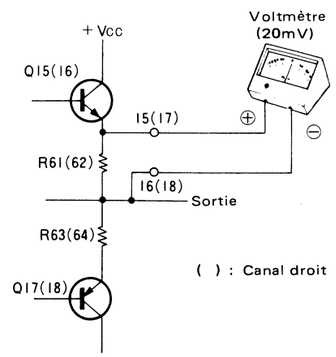
Potentiomètre VR6 (droit)

Points d'alignement

RÉGLAGES

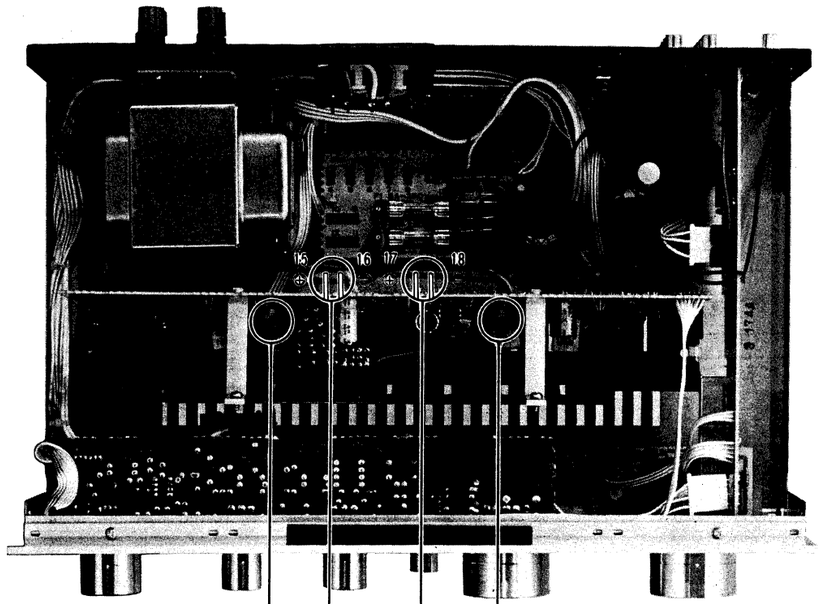
Réglage du courant de déplacement.

① Tourner le bouton de commande de volume à fond dans le sens invers de celui des alignilles d'une montre.
② Brancher le voltmètre aux points d'alignement, 15 et 16, sur la plaque circuit imprimé d'ampli de puissance (X09-1330-**).
③ Regler le potentiomètre adjustable VR5 (VR6) de façon à ce que le voltmètre indique 20 mV.



<Réglage du courant de déplacement >

ABGLEICHE



Halbeingebetten Widerstand VR5 (L-CH)

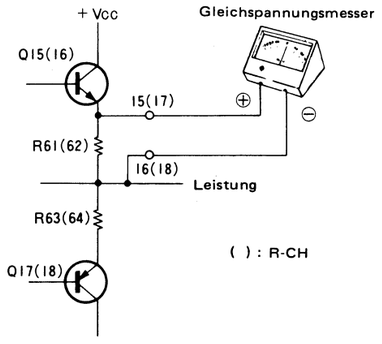
Regulierungs-Punkte (L-CH) für Leerlaufs

Halbeingebetten Widerstand VR6 (R-CH)

Regulierungs-Punkte (-CH) für Leerlaufs (R-CH)

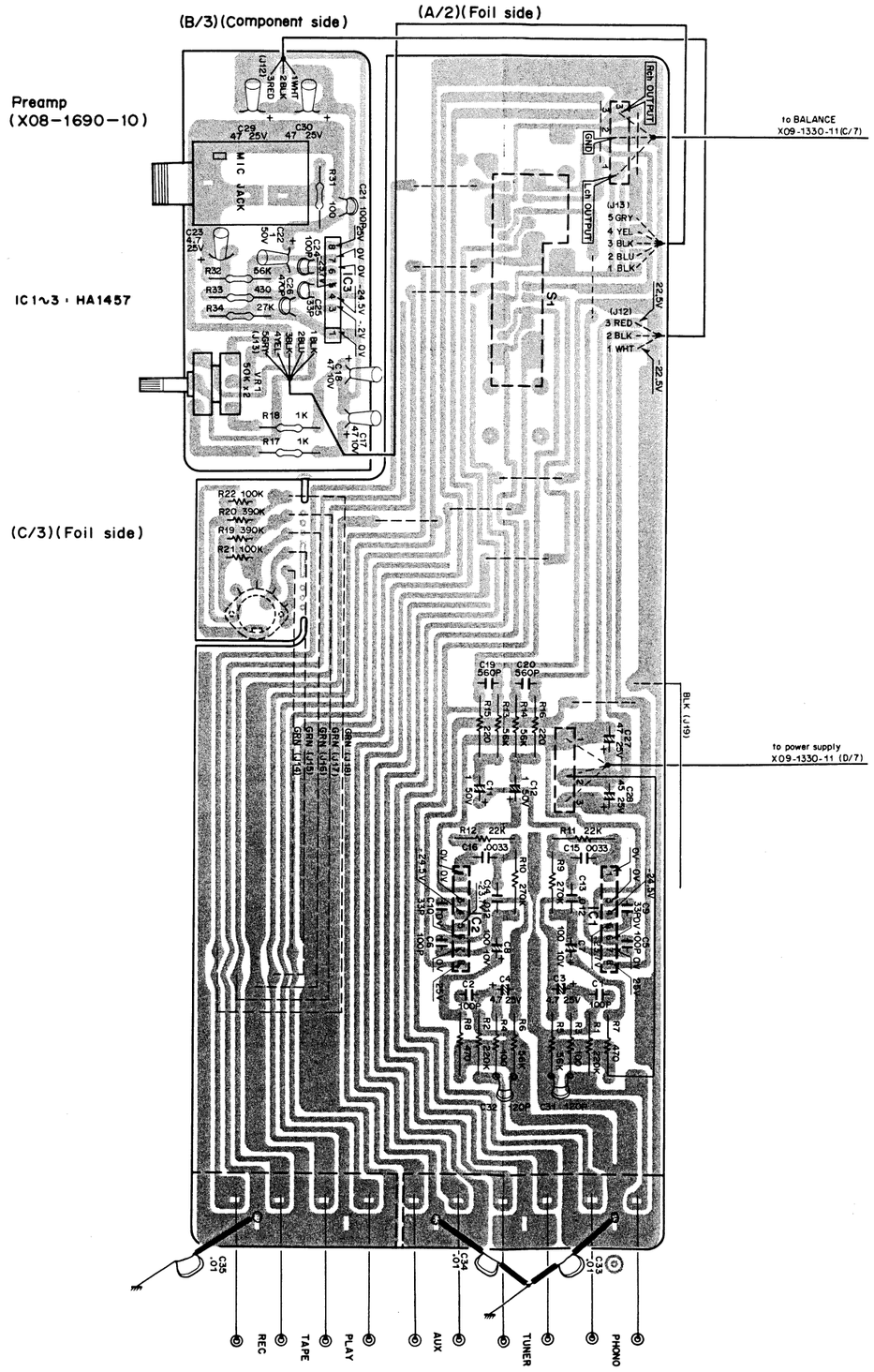
LEERLAUFS

① Den Laustärkeregler (VOLUME) drehen um die Leistungs verstärker-Aufnahme auf Null zu reduzieren.
② Den Gleichspannungsmesser zwischen der Klemme 15 und 16 (17 und 18) von X09-1330-**.
③ Den halbeingebbetten Widerstand VR5 (VR6) so regulieren, daß die Gleichspannungsmesser-Ablesung 20 mV ist.



< LEERLAUFS >

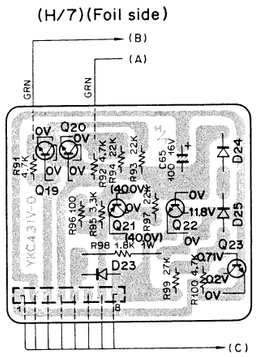
PC BOARD (1)



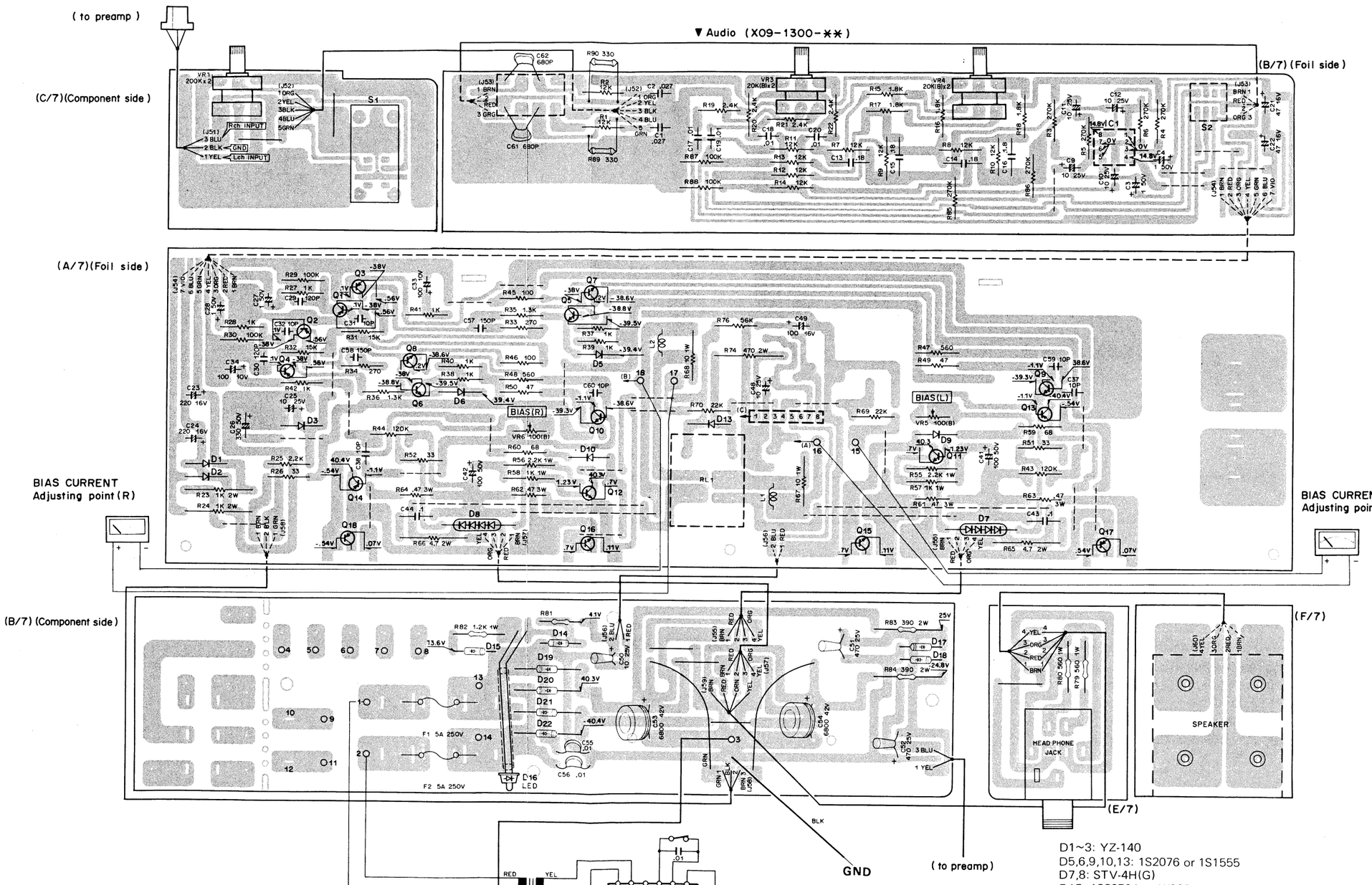
KA-305 KA-305

PC BOARD (2)

AUDIO (X09-1330-**)



Q19,20: 2SC1775
Q21: 2SA872
Q22: 2SC945(Q,P)
Q23: 2SC1213A(C)
D23~25: 1S2076 or 1S1555



Q1~4: 2SA872(D) or 2SA921(S)
Q5,6: 2SC945(Q,P) or 2SC828A(Q,R)
Q7,8:2SC1980(S,T) or 2SC1775
Q9,10: 2SC1904(B,V)
Q11,12: 2SC1735 or 2SD438MP(E,F)
Q13,14: 2SA850 or 2SB560MP(E,F)
Q15,16: 2SD883
Q17,18: 2SB773

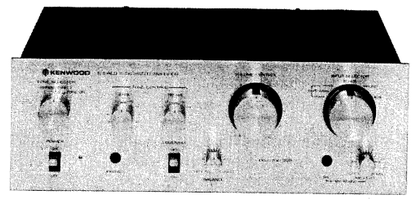
D1~3: YZ-140
D5,6,9,10,13: 1S2076 or 1S1555
D7,8: STV-4H(G)
D15: 1S2076A or W06B
D16: LED (B30-0175-05)
D17,18:CZ-225
D19~22: GP25D or U05C(S)
D14: W06B

IC1: NJM4558D(A)

KENWOOD

STEREO INTEGRATED AMPLIFIER

(KA-3055) KA-305



SPECIFICATIONS

POWER OUTPUT

40 watts* per channel minimum RMS, both channels driven, at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.08% total harmonic distortion.

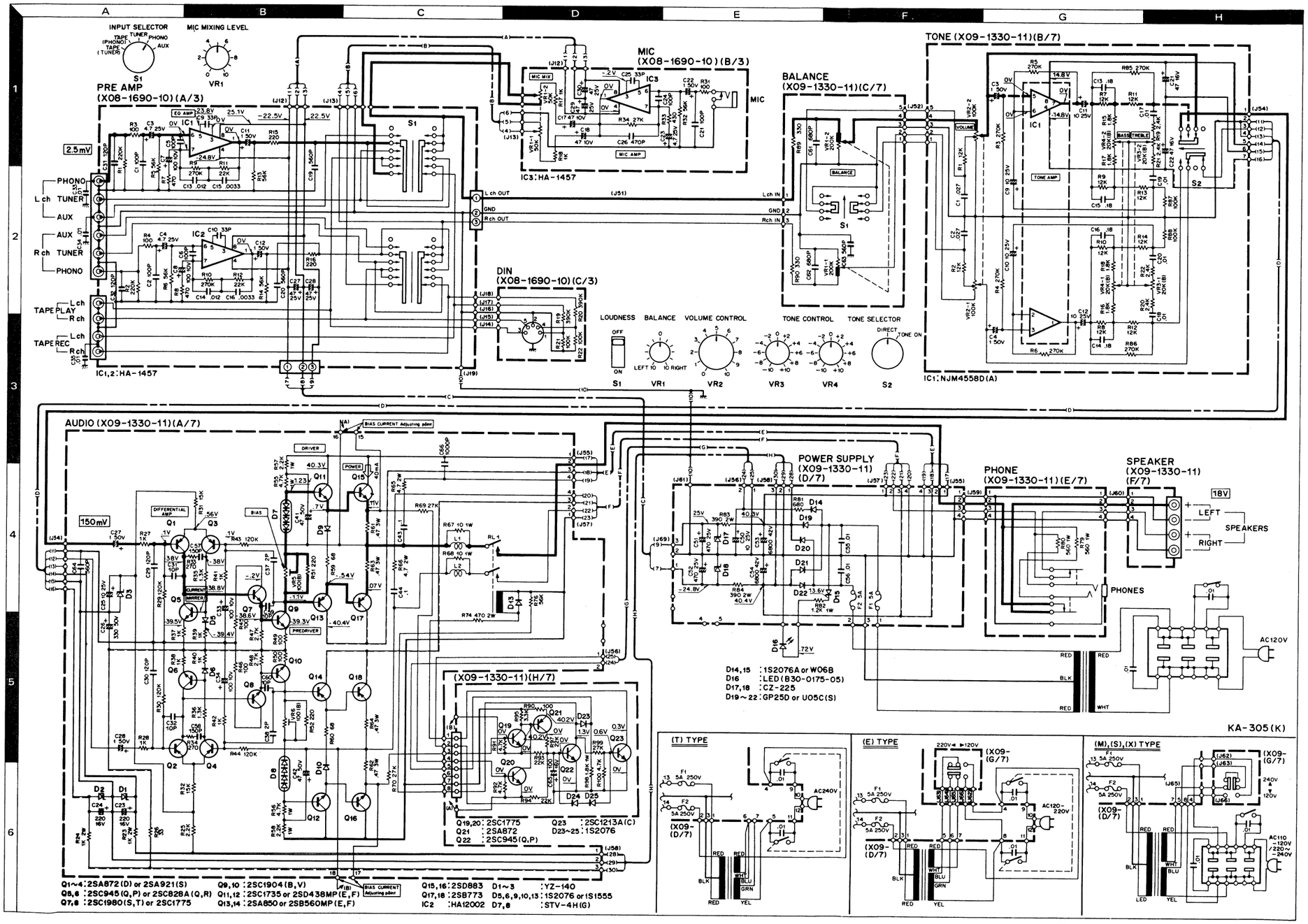
Both Channels Driven	44 + 44 watts 8 ohms at 1,000 Hz
	50 + 50 watts 4 ohms at 1,000 Hz
Total Harmonic Distortion	
AUX Input to SPEAKER Output	
(20 Hz ~ 20 kHz)	0.08% at rated power into 8 ohms
(1 kHz)	0.006% at rated power into 8 ohms
(20 Hz ~ 20 kHz)	0.05% at 1/2 rated power into 8 ohms
PHONO Input to SPEAKER Output	
(1 kHz)	0.06% at rated power with VOLUME −20 dB
Intermodulation Distortion (60 Hz : 7 kHz = 4 : 1)	0.004% at rated power into 8 ohms
Damping Factor	40
Power Bandwidth	5 Hz to 40,000 Hz at 0.08% T.H.D.
Frequency Response	3 Hz to 100 kHz, −3 dB
Speaker Impedance	Accept 4 ohms to 16 ohms
Input Sensitivity/Impedance	
Phono	2.5 mV/50 kohms
Tuner	150 mV/30 kohms
AUX	150 mV/30 kohms
Tape	150 mV/30 kohms
Mic	2.5 mV/50 kohms
Signal-to-Noise Ratio (IHF, A)	
Phono	77 dB for 2.5 mV input
	83 dB for 5.0 mV input
	89 dB for 10 mV input
Tuner, AUX, Tape	105 dB for 150 mV input
Mic	73 dB for 2.5 mV input
Maximum Input Level for Phono	260 mV (RMS), T.H.D. 0.08% at 1,000 Hz
Output Level/Impedance	
Tape REC (Pin)	150 mV/220 ohms
(DIN)	30 mV/75 kohms
Frequency Response for Phono	RIAA standard curve ±0.4 dB (30 Hz to 15,000 Hz)
Tone Control	
Bass	±10 dB at 100 Hz
Treble	±10 dB at 10,000 Hz
Loudness Control (at −30 dB VOLUME Level)	8 dB at 100 Hz

GENERAL

Power Consumption	320 watts at full power
A.C. Outlet	Switched 2, Unswitched 1
Dimensions	W 400 mm (15-6/8")
	H 139 mm (5-15/32")
	D 299 mm (11-25/32")
Weight (Net)	6.8 kg (15 lbs.)

* Measured pursuant to Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier in U.S.A.

Note: Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.



DC voltages are measured with 20kΩ/V VOM.

2SA850
2SC1735

2SA872
2SA921
2SB560MP
2SC828A

2SC945
2SC1775
2SC1980
2SC1713A
2SD438MP

2SC1904

2SB773
2SD883

NJM4558D

HA1457

PARTS LIST

☆: New parts
FP: Flame proof

RW: Wire wound power resistor
RN: Metal film resistor

RD: Carbon film resistor
RC: Carbon composition resistor

RS: Metal oxide film resistor

Ref. No.	Parts No.	Description	Remarks
		TOTAL	
–	A01-0351-03	Case	☆
–	A20-1364-02	Panel ass'y K,P,U,M,S,X,E	☆
–	A20-1365-02	Panel ass'y H	☆
–	A20-1366-02	Panel ass'y T	☆
–	B46-0055-20	Warranty card P	
–	B46-0060-00	Warranty card T	
–	B46-0061-20	Warranty card K	
–	B46-0062-20	Warranty card U,H	
–	B46-0063-00	Warranty card U	
–	B46-0064-00	Warranty card X	
–	B50-1808-00	Instruction manual K,U,S	☆
–	B50-1809-00	Instruction manual P,M,X	☆
–	B50-1810-00	Instruction manual H	☆
–	B50-1811-00	Instruction manual E	☆
–	B50-1812-00	Instruction manual T	☆
–	B59-0018-00	Guide book U	
C1~3	C54-3310-39	Ceramic 0.01μF DC2kV E,T	
C1,2	C90-0145-05	Film 0.01μF AC125V or K	
	C91-0001-05	Ceramic 0.01μF AC125V	
C1,2	C91-0023-05	Ceramic 0.01μF AC250V U,M,H,S,X	
C1,2	C91-0025-05	Film 0.01μF AC125V P	
–	E03-0007-05	AC outlet K,U,M,H,S,X	
–	E03-0009-05	AC outlet P	
–	E30-0181-05	Power cord K,P	
–	E30-0185-05	Power cord X	
–	E30-0515-05	Power cord U,M	
–	E30-0580-05	Power cord H,E	
–	E30-0602-05	Power cord S,T	
–	H01-1863-04	Carton box K,U,M,S	☆
–	H01-1864-04	Carton box P	☆
–	H01-1865-04	Carton box T	☆
–	H01-1867-04	Carton box H	☆
–	H01-1868-04	Carton box X,E	☆
–	H10-1497-12	Buffer fixture (L)	
–	H10-1498-12	Buffer fixture (R)	
–	H20-0417-04	Polyethylene cover M	
–	H20-0451-04	Polyethylene cover K,P,U,H,S,X,E,T	
–	H25-0078-04	Polyethylene bag	
–			
–	J02-0049-14	Foot x 4 P,U,M,H,S,X,E,T	
–	J02-0073-04	Foot x 4 K	
–	J41-0024-15	Power cord bushing S,X,T	
–	J41-0033-05	Power cord bushing U,M,H,E	
–	J41-0034-05	Power cord bushing K,P	
–	K23-0311-04	Knob x 2 (VOLUME, INPUT SELECTOR)	☆
–	K23-0313-04	Knob (TONE SELECTOR)	☆
–	K23-0315-04	Knob x 2 (TREBLE, BASS)	☆
–	K23-0317-04	Knob x 2 (BALANCE, MIC)	☆
–	K27-0085-04	Knob x 2 (Lever switch)	
–	L01-1681-05	Power transformer K	☆
–	L01-1685-05	Power transformer U,M,H,S,X	☆
–	L01-1686-05	Power transformer E,T	☆
–	L01-1687-05	Power transformer P	☆
–	N08-0128-35	GND terminal	
–	S33-1006-05	Power switch K,P	
–	S33-1007-05	Power switch U,M,H,S,X	
–	S33-2032-05	Power switch E,T	
–	X08-1690-10	Preamp PCB ass'y	☆
–	X09-1330-11	Audio PCB ass'y K,P	☆
–	X09-1330-22	Audio PCB ass'y U,M,H,S,X	☆
–	X09-1330-52	Audio PCB ass'y T	☆
–	X09-1332-72	Audio PCB ass'y E	☆

PREAMP PCB ASS'Y (X08-1690-10)

Ref. No.	Parts No.	Description	Remarks
C1,2	C71-1710-16	Ceramic 100pF ±10%	
C3,4	C24-1447-51	Electrolytic 4.7μF 25WV	
C5,6	C71-1710-16	Ceramic 100pF ±10%	
C7,8	C24-1010-71	Electrolytic 100μF 10WV	
C9,10	C71-1733-06	Ceramic 33pF ±10%	
C11,12	C24-1722-51	Electrolytic 2.2μF 50WV	
C13,14	C46-1712-35	Mylar 0.012μF ±5%	
C15,16	C46-1033-25	Mylar 0.0033μF ±5%	
C17,18	C24-1747-61	Electrolytic 47μF 10WV	
C19,20	C52-1756-16	Ceramic 560pF ±10%	
C21	C71-1410-16	Ceramic 100pF ±10%	
C22	C24-1710-51	Electrolytic 1μF 50WV	
C23	C24-1747-51	Electrolytic 4.7μF 25WV	
C24	C71-1710-16	Ceramic 100pF ±10%	
C25	C71-1733-06	Ceramic 33pF ±10%	
C26	C52-1747-16	Ceramic 470pF ±10%	
C27~30	C24-1447-61	Electrolytic 47μF 25WV	
C31,32	C71-1712-16	Ceramic 120pF ±10%	
C33~35	C55-1710-38	Ceramic 0.01μF +80%,–20%	
–	E06-0510-05	DIN connector	
–	E11-0070-05	Phone jack (MIC)	☆
–	E13-0417-15	Phono jack (4P)	
–	E13-0611-15	Phono jack (6P)	
VR1	R06-4040-05	Potentiometer 50kΩ(B) x2 (MIXING)	☆
S1	S29-1118-05	Rotary slide switch (INPUT SELECTOR)	
IC1~3	V30-0264-10	IC HA1457	

AUDIO PCB ASS'Y (X09-1330-11) -22, -52, 2-72

C1,2	C46-1727-36	Mylar 0.027μF ±5%	
C3,4	C24-1710-51	Electrolytic 1μF 50WV	
C9~12	C24-1410-61	Electrolytic 10μF 25WV	
C13~16	C46-1718-46	Mylar 0.18μF ±10%	
C17~20	C46-1710-36	Mylar 0.01μF ±10%	
C21,22	C24-1247-61	Electrolytic 47μF 16WV	
C23,24	C24-1222-71	Electrolytic 220μF 16WV	
C25	C24-1410-61	Electrolytic 10μF 25WV	
C26	C24-1733-71	Electrolytic 330μF 50WV	
C27,28	C24-1710-51	Electrolytic 1μF 50WV	
C29,30	C71-1712-15	Ceramic 120pF ±5%	
C31,32	C71-1710-02	Ceramic 10pF ±0.5pF	
C33,34	C24-1010-71	Electrolytic 100μF 10WV	
C35,36	C71-1710-02	Ceramic 10pF ±0.5pF	
C37,38	C71-1703-01	Ceramic 3pF ±0.25pF	
C41,42	C24-1710-71	Electrolytic 100μF 50WV	
C43,44	C46-1710-47	Mylar 0.1μF ±20%	
C49	C25-1210-77	Electrolytic 100μF 16WV	
C50	C24-1410-61	Electrolytic 10μF 25WV	
C51,52	C24-1447-71	Electrolytic 470μF 25WV	
C53,54	C90-0338-05	Electrolytic 6800μF 42WV	
C55,56	C54-2710-39	Ceramic 0.01μF +100%,–0%	
C57,58	C71-1715-15	Ceramic 150pF ±5%	
C61,62	C52-1768-16	Ceramic 680pF ±10%	
C63,64	C52-1756-16	Ceramic 560pF ±10%	
C65	C25-1210-77	Electrolytic 100μF 16WV	
C66	C54-1710-38	Ceramic 0.01μF +80%,–20%	

PARTS LIST/SEMICONDUCTOR SUBSTITUTIONS

Ref. No.	Parts No.	Description	Remarks
C67,68	C24-1010-81	Electrolytic 1000μF 10WV	
–	E11-0071-05	Headphone jack	☆
–	E20-0813-05	Binding post ass'y	
F1,2	F05-5021-05	Fuse 5A K,P	
F1,2	F05-5022-05	Fuse 5A U,M,H,S,X	
F1,2	F05-5024-05	Fuse 5A E,T	
–	J13-0041-05	Fuse holder x 4 K,P,U,M,H,S,X	
–	J13-0054-05	Fuse holder x 4 E,T	
L1,2	L39-0085-05	Phase compensation coil	
VR1	R06-5040-05	Potentiometer 200kΩ (MN) BALANCE	
VR2	R06-5022-05	Potentiometer 100kΩ (3BM) VOLUME	
VR3,4	R06-3015-05	Potentiometer 20kΩ(B)x2 TONE	
VR5,6	R12-0070-05	Trimming potentiometer 100Ω(B) (Bias adj.)	
R23,24	R47-1510-25	FP-RS 1kΩ ±5% 2W	
R25	R43-1222-25	FP-RD 2.2kΩ ±5% 1/4W	
R26	R43-1233-05	FP-RD 33Ω ±5% 1/4W	
R47,48	R43-1227-25	FP-RD 2.7kΩ ±5% 1/4W	
R49,50	R43-1210-15	FP-RD 100Ω ±5% 1/4W	
R51,52	R43-1222-15	FP-RD 220Ω ±5% 1/4W	
R55,56	R47-1447-25	FP-RS 4.7kΩ ±5% 1W	
R57,58	R47-1422-25	FP-RS 2.2kΩ ±5% 1W	
R59,60	R43-1268-05	FP-RD 68Ω ±5% 1/4W	
R61~64	R92-0111-05	Metal 0.47Ω ±5% 3W	
R65,66	R47-1547-95	FP-RS 4.7Ω ±5% 2W	
R67,68	R47-1410-05	FP-RS 10Ω ±5% 1W	
R74	R47-1547-15	FP-RS 470Ω ±5% 2W	
R79,80	R47-1456-15	FP-RS 560Ω ±5% 1W	
R82	R47-1412-25	FP-RS 1.2kΩ ±5% 1W	
R83,84	R47-1539-15	FP-RS 390Ω ±5% 2W	
R98	R47-1418-25	FP-RS 1.8kΩ ±5% 1W	
S1	S33-2031-05	Lever switch (LOUDNESS)	
S2	S29-1117-05	Rotary switch (TONE SELECTOR)	☆
S3	S31-2050-05	Slide switch (POWER VOLTAGE SELECTOR) U,M,H,S,X,E	
RL	S51-2038-05	Relay	
Q1~4	V01-0202-05 / V01-0921-10	Transistor 2SA872(D) or 2SA921(S)	
Q5,6	V03-0348-05 / V03-0345-05	Transistor 2SC945(Q,P) or 2SC828A(Q,R)	
Q7,8	V03-1980-10 / V03-1775-00	Transistor 2SC1980(S,T) or 2SC1775	
Q9,10	V03-0460-05	Transistor 2SC1904(B,V)	
Q11,12	V03-0452-05 / V04-0438-10	Transistor 2SC1735 or 2SD438MP(E,F)	
Q13,14	V01-0173-05 / V02-0560-10	Transistor 2SA850 or 2SB560MP(E,F)	
Q15,16	V04-0883-00	Transistor 2SD883	
Q17,18	V02-0773-00	Transistor 2SB773	
Q19,20	V03-1775-00	Transistor 2SC1775	
Q21	V01-0198-05	Transistor 2SA872	
Q22	V03-0348-05	Transistor 2SC945(Q,P)	
Q23	V03-0240-05	Transistor 2SC1213A(C)	
IC1	V30-0248-10	IC NJM4558D(A)	
D1~3	V11-0254-05	Zener diode YZ-140	
D5,6	V11-0271-05 / V11-0076-05	Diode 1S2076 or 1S1555	
D7,8	V11-5100-40	Diode STV-4H(G)	
D9,10,13	V11-0271-05 / V11-0076-05	Diode 1S2076 or 1S1555	
D14,15	V11-0273-05 / V11-0295-05	Diode 1S2076A or W06B	
D16	B30-0175-05	LED	☆
D17,18	V11-4103-20	Zener diode CZ-225	
D19~22	V11-0465-05 / V11-2100-10	Diode GP25D or U05C(S)	
D23~25	V11-0271-05 / V11-0076-05	Diode 1S2076 or 1S1555	

SEMICONDUCTOR SUBSTITUTIONS

Ref. No.	Semiconductor Name	Semiconductor Substitutions
Preamp.	**X08-1690-10**	
IC1~3	HA1457	–
Audio.	**X09-1330-****	
Q1~4,21	2SA872(D) 2SA921(S)	2SA750(F)
Q5,6,22	2SC945(Q,P) 2SC828A(Q,R)	2SC1400 2SC1222
Q7,8,19,20	2SC1980(S,T) 2SC1775	2SC1890
Q9,10	2SC1904V	–
Q11,12	2SC1735 2SD438MP	2SC1509
Q13,14	2SA850 2SB560MP	2SA773
Q15,16	2SD883	–
Q17,18	2SB773	–
Q23	2SC1213A(C)	–
IC1	NJM4558D(A)	–

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